# Safety Data Sheet
# Ethylene glycol

Version 1.4 Revision Date: 05/07/2015

## SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

**Product name** : Ethylene glycol
**Product Use Description** : Industrial chemical

**Manufacturer or supplier's details**

**Company** : Nexeo Solutions LLC
**Address** 3 Waterway Square Place Suite 1000
Woodlands, Tx. 77380
United States of America

**Emergency telephone number:**
Health North America: 1-855-NEXEO4U (1-855-639-3648)
Health International: 1-855-NEXEO4U (1-855-639-3648)
Transport North America: CHEMTREC 800.424.9300

**Additional Information:** : Responsible Party: Product Safety Group
E-Mail: msds@nexeosolutions.com
SDS Requests: 1-855-429-2661
SDS Requests Fax: 1-281-500-2370
Website: www.nexeosolutions.com

## SECTION 2. HAZARDS IDENTIFICATION

**GHS Classification**

Acute toxicity (Oral) : Category 4

Specific target organ toxicity - repeated exposure (Oral) : Category 2 (Kidney)

**GHS Label element**

Hazard pictograms :

Signal word : Warning

Hazard statements : H303 May be harmful if swallowed.
H373 May cause damage to organs through prolonged or repeated exposure if swallowed.

Precautionary statements : **Prevention:**
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.

P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
**Response:**
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.
P314 Get medical advice/ attention if you feel unwell.
**Disposal:**
P501 Dispose of contents/ container to an approved waste disposal plant.

**Potential Health Effects**

**Carcinogenicity:**

**IARC** No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**ACGIH** No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

**OSHA** No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**NTP** No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

**Emergency Overview**

| | |
|---|---|
| Appearance | liquid |
| Colour | Various |
| Odour | mild, sweet |
| Hazard Summary | No information available. |

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance

**Hazardous components**

| CAS-No. | Chemical Name | Concentration (%) |
|---|---|---|
| 107-21-1 | Ethylene glycol | 90 - 100 |

| | | |
|---|---|---|
| **Synonyms** | : | Ethylene glycol Industrial/Ethylene glycol Meglobal/Glycol/Solv Ethylene glycol, |

## SECTION 4. FIRST AID MEASURES

| | | |
|---|---|---|
| General advice | : | Move out of dangerous area.<br>Show this safety data sheet to the doctor in attendance.<br>Do not leave the victim unattended. |
| If inhaled | : | If unconscious place in recovery position and seek medical advice.<br>If symptoms persist, call a physician. |
| In case of skin contact | : | Wash off with soap and water.<br>If symptoms persist, call a physician. |
| In case of eye contact | : | Flush eyes with water as a precaution.<br>Protect unharmed eye.<br>Keep eye wide open while rinsing.<br>If eye irritation persists, consult a specialist. |
| If swallowed | : | Do not induce vomiting without medical advice.<br>Keep respiratory tract clear.<br>Do not give milk or alcoholic beverages.<br>Never give anything by mouth to an unconscious person.<br>If symptoms persist, call a physician.<br>Take victim immediately to hospital. |

## SECTION 5. FIREFIGHTING MEASURES

| | | |
|---|---|---|
| Suitable extinguishing media | : | Water spray<br>Dry chemical<br>Carbon dioxide (CO2)<br>Alcohol-resistant foam |
| Unsuitable extinguishing media | : | High volume water jet |
| Hazardous combustion products | : | Carbon oxides |
| Specific extinguishing methods | : | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |

| | | |
|---|---|---|
| Further information | : | Standard procedure for chemical fires. |
| Special protective equipment for firefighters | : | Wear self-contained breathing apparatus for fire-fighting if necessary. |

## SECTION 6. ACCIDENTAL RELEASE MEASURES

| | | |
|---|---|---|
| Environmental precautions | : | Prevent product from entering drains.<br>Prevent further leakage or spillage if safe to do so.<br>If the product contaminates rivers and lakes or drains inform respective authorities. |
| Methods and materials for containment and cleaning up | : | Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).<br>Keep in suitable, closed containers for disposal. |

## SECTION 7. HANDLING AND STORAGE

| | | |
|---|---|---|
| Advice on safe handling | : | Do not breathe vapours/dust.<br>For personal protection see section 8.<br>Smoking, eating and drinking should be prohibited in the application area.<br>Dispose of rinse water in accordance with local and national regulations. |
| Conditions for safe storage | : | Keep container tightly closed in a dry and well-ventilated place.<br>Electrical installations / working materials must comply with the technological safety standards. |

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Components with workplace control parameters**

| CAS-No. | Components | Value type (Form of exposure) | Control parameters / Permissible concentration | Basis |
|---|---|---|---|---|
| 107-21-1 | Ethylene glycol | TLV-C | 50 ppm<br>125 mg/m3 | OSHA P0 |
| | | C | 100 mg/m3 | ACGIH |
| | | C (Aerosol only) | 100 mg/m3 | ACGIH |

**Personal protective equipment**

| | | |
|---|---|---|
| Respiratory protection | : | No personal respiratory protective equipment normally required. |
| Hand protection<br>Remarks | : | The suitability for a specific workplace should be discussed with the producers of the protective gloves. |
| Eye protection | : | Eye wash bottle with pure water<br>Tightly fitting safety goggles |
| Skin and body protection | : | impervious clothing<br>Choose body protection according to the amount and concentration of the dangerous substance at the work place. |
| Hygiene measures | : | When using do not eat or drink.<br>When using do not smoke.<br>Wash hands before breaks and at the end of workday. |

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

| | | |
|---|---|---|
| Appearance | : | liquid |
| Colour | : | Various |
| Odour | : | mild, sweet |
| Odour Threshold | : | No data available |
| pH | : | 9 @ 20 °C (68 °F) |
| Freezing Point (Melting point/freezing point) | : | -13 °C (9 °F) |
| Boiling Point (Boiling point/boiling range) | : | 197 °C (387 °F) |
| Flash point | : | >= 111 °C (>= 232 °F) |
| Evaporation rate | : | < 1<br>n-Butyl Acetate |
| Flammability (solid, gas) | : | No data available |
| Burning rate | : | No data available |
| Upper explosion limit | : | 15.3 %(V) |

| | | |
|---|---|---|
| Lower explosion limit | : | 3.2 %(V) |
| Vapour pressure | : | 0.9 - 1.6 mmHg @ 20 °C (68 °F) |
| Relative vapour density | : | 2.1 |
| Relative density | : | 1.115 @ 20 °C (68 °F) |
| Density | : | 1.11 g/cm3 @ 20 °C (68 °F) |
| Bulk density | : | No data available |
| Solubility(ies) | | |
| Water solubility | : | completely soluble |
| Solubility in other solvents | : | No data available |
| Partition coefficient: n-octanol/water | : | log Pow: -1.36 |
| Auto-ignition temperature | : | 398 °C |
| Thermal decomposition | : | No data available |
| Viscosity | | |
| Viscosity, dynamic | : | 26 mPa.s @ 15 °C (59 °F) |

## SECTION 10. STABILITY AND REACTIVITY

| | | |
|---|---|---|
| Reactivity | : | No dangerous reaction known under conditions of normal use. |
| Chemical stability | : | Stable under normal conditions. |
| Possibility of hazardous reactions | : | No hazards to be specially mentioned. |
| Conditions to avoid | : | Heat, flames and sparks. |
| Incompatible materials | : | Aldehydes<br>aluminum<br>Strong acids<br>Strong bases<br>Strong oxidizing agents |

Hazardous decomposition products : carbon dioxide and carbon monoxide

## SECTION 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

**Components:**

**107-21-1:**

Acute oral toxicity : LD50 (rat): 2,000 mg/kg
Assessment: The component/mixture is moderately toxic after single ingestion.

Acute inhalation toxicity : LC50 (rat, male and female): > 2.5 mg/l
Exposure time: 6 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (mouse, male and female): > 3,500 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

### Skin corrosion/irritation

**Components:**

**107-21-1:**
Species: rabbit
Exposure time: 20 h
Method: In vivo
Result: No skin irritation

### Serious eye damage/eye irritation

**Components:**

**107-21-1:**
Species: rabbit
Result: No eye irritation
Exposure time: 24 h
Method: In vivo

### Respiratory or skin sensitisation

**Components:**

**107-21-1:**
Test Type: Maximisation Test (GPMT)
Species: guinea pig
Result: Did not cause sensitisation on laboratory animals.

**Germ cell mutagenicity**

**Components:**

**107-21-1:**

| | | |
|---|---|---|
| Genotoxicity in vitro | : | Test Type: Ames test<br>Metabolic activation: with and without metabolic activation<br>Method: OECD Test Guideline 471<br>Result: negative<br>GLP: yes |
| Genotoxicity in vivo | : | Test Type: Dominant lethal assay<br>Test species: rat (male and female)<br>Application Route: Oral<br>Exposure time: daily<br>Dose: 0, 40, 200, 1000 mg/kg<br>Result: negative |
| Germ cell mutagenicity-Assessment | : | Tests on bacterial or mammalian cell cultures did not show mutagenic effects. |

**Carcinogenicity**

**Components:**

**107-21-1:**
Species: mouse, (male and female)
Application Route: Oral
Exposure time: 24 mths
Dose: 0, 40, 200, 1000 mg/kg
Frequency of Treatment: daily
LOAEL: 1,000 mg/kg

Result: Ambiguous

| | | |
|---|---|---|
| Carcinogenicity - Assessment | : | Not classifiable as a human carcinogen. |

**Reproductive toxicity**

**Components:**

**107-21-1:**

| | | |
|---|---|---|
| Effects on fertility | : | Test Type: Three-generation study<br>Species: rat, male and female<br>Application Route: Oral |

Dose: 0, 40, 200, 1000 mg/kg
General Toxicity - Parent: NOAEL: > 1,000 mg/kg body weight
General Toxicity F1: NOAEL: > 1,000 mg/kg body weight
Result: No reproductive effects.

Effects on foetal development : Species: rabbit
Application Route: Oral
Dose: 0, 100, 500, 1000, 2000 mg/kg
Duration of Single Treatment: 10 d
General Toxicity Maternal: NOAEL: 1,000 mg/kg body weight
Teratogenicity: NOAEL: 2,000 mg/kg body weight
Developmental Toxicity: NOAEL: 2,000 mg/kg body weight
Result: No teratogenic effects.
GLP: yes

Species: mouse
Application Route: inhalation (dust/mist/fume)
Dose: 0, 60, 400, 1000 ppm
Duration of Single Treatment: 10 d
Frequency of Treatment: 6 hr/day
General Toxicity Maternal: NOAEC: 60 ppm
Teratogenicity: NOAEC: 60 ppm
Developmental Toxicity: NOAEC: 60 ppm
Symptoms: Maternal toxicity, Malformations were observed.
Result: Teratogenic effects.

Reproductive toxicity - Assessment : Fertility classification not possible from current data.
Embryotoxicity classification not possible from current data.

**STOT - single exposure**

**Product:**No data available

**Components:**
107-21-1:No data available

**STOT - repeated exposure**

**Product:**No data available

**Components:**

**107-21-1:**

| Exposure routes: | Target Organs: | Assessment: | Remarks: |
|---|---|---|---|
| Oral | Kidney | May cause damage to organs through | |

| | | | |
|---|---|---|---|
| | | prolonged or repeated exposure., The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2. | |

**Repeated dose toxicity**

**Components:**

**107-21-1:**
Species: rat, male
NOAEL: 150 mg/kg
Application Route: Oral
Exposure time: 12 mths
Number of exposures: daily
Dose: 0, 50, 150, 300, 400 mg/kg bw
Method: OECD Test Guideline 452
Target Organs: Kidney
Symptoms: Kidney disorders

Repeated dose toxicity - Assessment : Harmful if swallowed.

**Aspiration toxicity**

**Product:**
No aspiration toxicity classification

**Components:**
**107-21-1:**
No aspiration toxicity classification

**Further information**

**Product:**
Remarks: No data available

## SECTION 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

**Components:**

**107-21-1:**

| | | |
|---|---|---|
| Toxicity to fish | : | LC50 (Pimephales promelas (fathead minnow)): > 100 mg/l<br>Exposure time: 96 h<br>Test Type: static test |
| Toxicity to daphnia and other aquatic invertebrates | : | LC50 (Daphnia magna (Water flea)): > 100 mg/l<br>Exposure time: 48 h<br>Test Type: static test<br>Method: OECD Test Guideline 202<br>GLP: yes |
| Toxicity to algae | : | (Pseudokirchneriella subcapitata (Selenastrum capricornutum)): > 100 mg/l<br>End point: Growth rate<br>Exposure time: 96 h<br>Test Type: static test |
| Toxicity to bacteria | : | Toxicity threshold (Pseudomonas putida): > 10,000 mg/l<br>Exposure time: 16 h<br>Test Type: Static<br>Method: DIN 38412 |

**Persistence and degradability**

**Components:**

**107-21-1:**

| | | |
|---|---|---|
| Biodegradability | : | aerobic<br>Inoculum: Activated sludge, domestic, adaption not specified<br>Biodegradation: 90 - 100 %<br>Exposure time: 10 d<br>GLP: yes<br>Remarks: Readily biodegradable |

**Bioaccumulative potential**

**Components:**

**107-21-1:**

| | | |
|---|---|---|
| Bioaccumulation | : | Species: Fish<br>Bioconcentration factor (BCF): 0.60<br>Exposure time: 61 d |
| Partition coefficient: n-octanol/water | : | log Pow: -1.36 |

**Mobility in soil**
No data available

**Other adverse effects**
No data available

**Product:**

| | |
|---|---|
| Regulation | 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances |
| Remarks | This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B). |

Additional ecological information : No data available

## SECTION 13. DISPOSAL CONSIDERATIONS

**Disposal methods**

Waste from residues : Dispose of in accordance with all applicable local, state and federal regulations.
For assistance with your waste management needs - including disposal, recycling and waste stream reduction, contact NEXEO's Environmental Services Group at 800-637-7922.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.

## SECTION 14. TRANSPORT INFORMATION

**IATA (International Air Transport Association)**: Not regulated as a dangerous good

**IMDG-Code**: Not regulated as a dangerous good

**DOT (Department of Transportation)**: UN3082, Environmentally hazardous substances, liquid, n.o.s., (ETHYLENE GLYCOL), 9, III

**Special Notes:** : Class 9, Packing Group III when material is shipped in quantities in one package at or above the Reportable Quantity and when no other hazard class applies; oth-

erwise, not regulated.

## SECTION 15. REGULATORY INFORMATION

**OSHA Hazards** : Toxic by inhalation., Carcinogen, Teratogen

**WHMIS Classification** : D2A: Very Toxic Material Causing Other Toxic Effects

**EPCRA - Emergency Planning and Community Right-to-Know Act**

**CERCLA Reportable Quantity**

| Components | CAS-No. | Component RQ (lbs) | Calculated product RQ (lbs) |
|---|---|---|---|
| Ethylene glycol | 107-21-1 | 5000 | 5000 |

**SARA 304 Extremely Hazardous Substances Reportable Quantity**

This material does not contain any components with a section 304 EHS RQ.

**SARA 311/312 Hazards** : Acute Health Hazard
Chronic Health Hazard

**SARA 302** : SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313** : The following components are subject to reporting levels established by SARA Title III, Section 313:

107-21-1 Ethylene glycol 100 %

**Clean Air Act**

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):

107-21-1 Ethylene glycol 100 %

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489):

107-21-1 Ethylene glycol 100 %

**Clean Water Act**

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. Clean-Water Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

**US State Regulations**

**Massachusetts Right To Know**

| | | |
|---|---|---|
| 107-21-1 | Ethylene glycol | 90 - 100 % |

**Pennsylvania Right To Know**

| | | |
|---|---|---|
| 107-21-1 | Ethylene glycol | 90 - 100 % |

**New Jersey Right To Know**

| | | |
|---|---|---|
| 107-21-1 | Ethylene glycol | 90 - 100 % |

**California Prop 65** This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

**The components of this product are reported in the following inventories:**

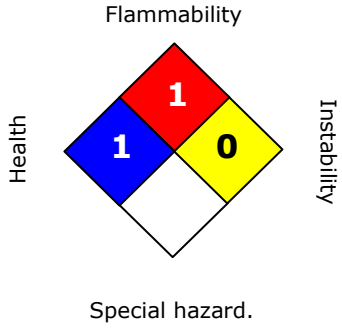
| | | |
|---|---|---|
| **Switzerland. New notified substances and declared preparations** | : | y (positive listing) (The formulation contains substances listed on the Swiss Inventory) |
| **United States TSCA Inventory** | : | y (positive listing) (On TSCA Inventory) |
| **Canadian Domestic Substances List (DSL)** | : | y (positive listing) (All components of this product are on the Canadian DSL.) |
| **Australia Inventory of Chemical Substances (AICS)** | : | y (positive listing) (On the inventory, or in compliance with the inventory) |
| **New Zealand. Inventory of Chemical Substances** | : | y (positive listing) (On the inventory, or in compliance with the inventory) |
| **Japan. ENCS - Existing and New Chemical Substances Inventory** | : | y (positive listing) (On the inventory, or in compliance with the inventory) |
| **Japan. ISHL - Inventory of Chemical Substances (METI)** | : | y (positive listing) (On the inventory, or in compliance with the inventory) |

| | | |
|---|---|---|
| **Korea. Korean Existing Chemicals Inventory (KECI)** | : | y (positive listing) (On the inventory, or in compliance with the inventory) |
| **Philippines Inventory of Chemicals and Chemical Substances (PICCS)** | : | y (positive listing) (On the inventory, or in compliance with the inventory) |
| **China. Inventory of Existing Chemical Substances in China (IECSC)** | : | y (positive listing) (On the inventory, or in compliance with the inventory) |

## SECTION 16. OTHER INFORMATION

**Further information**

**NFPA:**




**HMIS III:**

| | |
|---|---|
| **HEALTH** | **1*** |
| **FLAMMABILITY** | **1** |
| **PHYSICAL HAZARD** | **0** |

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 =Extreme, * = Chronic

The information accumulated is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made become available subsequently to the date hereof, we do not assume any responsibility for the results of its use. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This MSDS has been prepared by NEXEO™ Solutions EHS Product Safety Department (1-855-429-2661) MSDS@nexeosolutions.com.

**Legecy MSDS:** R0000003

**Material number:**

16074387, 16072954, 16062967, 16062968, 16062969, 16062427, 16056075, 16056074, 16055096, 16051591, 16045661, 16041542, 16037771, 16037563, 16034406, 16033659, 16033181, 102641, 16030354, 16026819, 16013884, 16013560, 16012467, 16012189, 16004457, 775747, 768004, 736726, 736570, 729076, 721550, 714457, 714015, 714153, 666370, 611623, 598441, 594558, 86147, 87305, 559851, 554069, 554044, 554070, 554370, 554327, 554244, 554232, 554141, 554097, 554067, 554068, 105297, 103280, 102638, 101896, 88915, 87858, 86506, 86256, 72718, 71481, 70931, 70647, 70642, 70518, 70210, 56154, 55100, 54253, 53829, 508796, 508585, 508339, 508338, 53748, 87014, 69879, 53391, 103693, 85514, 144460, 86148, 54548, 86509, 502712, 29968, 20006, 20002, 24453, 22235, 20005, 20004, 20003, 506082

| **Key or legend to abbreviations and acronyms used in the safety data sheet** | | | |
|---|---|---|---|
| ACGIH | American Conference of Government Industrial Hygienists | LD50 | Lethal Dose 50% |
| AICS | Australia, Inventory of Chemical Substances | LOAEL | Lowest Observed Adverse Effect Level |
| DSL | Canada, Domestic Substances List | NFPA | National Fire Protection Agency |
| NDSL | Canada, Non-Domestic Substances List | NIOSH | National Institute for Occupational Safety & Health |
| CNS | Central Nervous System | NTP | National Toxicology Program |
| CAS | Chemical Abstract Service | NZIoC | New Zealand Inventory of Chemicals |
| EC50 | Effective Concentration | NOAEL | No Observable Adverse Effect Level |
| EC50 | Effective Concentration 50% | NOEC | No Observed Effect Concentration |
| EGEST | EOSCA Generic Exposure Scenario Tool | OSHA | Occupational Safety & Health Administration |
| EOSCA | European Oilfield Specialty Chemicals Association | PEL | Permissible Exposure Limit |
| EINECS | European Inventory of Existing Chemical Substances | PICCS | Philipines Inventory of Commercial Chemical Substances |
| MAK | Germany Maximum Concentration Values | PRNT | Presumed Not Toxic |
| GHS | Globally Harmonized System | RCRA | Resource Conservation Recovery Act |
| >= | Greater Than or Equal To | STEL | Short-term Exposure Limit |
| IC50 | Inhibition Concentration 50% | SARA | Superfund Amendments and Reauthorization Act. |
| IARC | International Agency for Research on Cancer | TLV | Threshold Limit Value |
| IECSC | Inventory of Existing Chemical Substances in China | TWA | Time Weighted Average |
| ENCS | Japan, Inventory of Existing and New Chemical Substances | TSCA | Toxic Substance Control Act |
| KECI | Korea, Existing Chemical Inventory | UVCB | Unknown or Variable Compositon, Complex Reaction Products, and Biological Materials |
| <= | Less Than or Equal To | WHMIS | Workplace Hazardous Materials In- |

| | | | |
|---|---|---|---|
| | | | formation System |
| LC50 | | Lethal Concentration 50% | |